

WA8MNAF1

Financial mathematics

Core + Challenge

Forms of Payment — Marking Key

I can compare cash, debit, credit, buy now pay later and lay-by, including surcharges and the total cost of each.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

Section A Fluency: 16 Section B Core: 22 Section C Reasoning: 9 Section D Challenge: 11 **Total: 58**

Fluency: 1 mark each; accept an equivalent unsimplified answer for half credit at tutor's discretion.

A

Fluency *answers and working*

/ 16 marks

Q	Answer	Working
1	\$1.20	80×0.015
2	\$5.40	360×0.015
3	\$153	150×1.02
4	\$45 each	$180 \div 4$
5	\$80	$320 \div 4$
6	\$300	$285 + 15$
7	\$30	$300 \div 10$
8	\$0.54	45×0.012
9	\$17.95	3c rounds up to 5c
10	\$24.00	2c rounds down to 0c
11	\$12.15	$50 - 37.85$
12	\$297	6×49.50
13	2.5%	$\frac{2}{80} \times 100\%$
14	EFTPOS / debit card	Money comes straight out of your account
15	Lay-by	The store holds the item until it is paid off
16	Credit card	Interest on the unpaid balance after the due date

B

Core answers, working and marks

/ 22 marks

Q	Answer	Working / sample response	Marks
1	\$18; \$1218	$1200 \times 0.015 = \$18$ $1200 + 18 = \$1218$ <i>1 mark: \$18</i> <i>1 mark: \$1218</i>	2
2	\$55; 6 weeks	$220 \div 4 = \$55$ Payments at weeks 0, 2, 4 and 6 <i>1 mark: \$55</i> <i>1 mark: 6 weeks</i>	2
3	(a) \$54 (b) \$60.75 (c) \$550	(a) $540 \times 0.1 = \$54$ (b) $(540 - 54) \div 8 = 486 \div 8 = \$60.75$ (c) $540 + 10 = \$550$ <i>1 mark each</i>	3
4	Cash \$855, card \$913.50, BNPL \$900; difference \$58.50	Cash: $900 \times 0.95 = \$855$ Card: $900 \times 1.015 = \$913.50$; BNPL: $4 \times 225 = \$900$ $913.50 - 855 = \$58.50$ <i>1 mark: cash</i> <i>1 mark: card and BNPL</i> <i>1 mark: \$58.50</i>	3
5	e.g. no interest or debt; no interest-free period / needs the money now	Advantage: you only spend money you have, so there is no debt or interest. Disadvantage: you need the money in your account now; less purchase protection and no interest-free days. <i>1 mark: valid advantage</i> <i>1 mark: valid disadvantage</i>	2
6	\$6.55	$\$63.47$ rounds to $\$63.45$ (7c rounds down to 5c) $70 - 63.45 = \$6.55$ <i>1 mark: \$63.45</i> <i>1 mark: \$6.55</i>	2
7	\$1.92; \$40.32	$38.40 \times 0.05 = \$1.92$ $38.40 + 1.92 = \$40.32$ <i>1 mark each</i>	2
8	\$120; 8.3%	Plan: $65 \times 24 = \$1560$; $1560 - 1440 = \$120$ $\frac{120}{1440} \times 100\% = 8.33\ldots\% \approx 8.3\%$ <i>1 mark: \$120</i> <i>1 mark: 8.3%</i>	2
9	\$500	Total = price $\times 1.015$ $507.50 \div 1.015 = \$500$ <i>1 mark: $\div 1.015$</i> <i>1 mark: \$500</i>	2

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Q	Answer	Working / sample response	Marks
10	\$7.50; \$257.50	$250 \times 0.03 = \$7.50$ $250 + 7.50 = \$257.50$ <i>1 mark each</i>	2

C

Reasoning *sample answers and marking criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	The shop pays fees to the card company	Banks and card companies charge the shop a fee (a percentage) for each card payment. The surcharge passes that cost on to the customer who chose that way to pay. <i>1 mark: merchant fees</i> <i>1 mark: cost passed on</i>	2
2	e.g. late fees, overspending, many debts at once	Missed or late payments attract fees, which can add up quickly. It is easy to spend more than you can afford, because you do not pay the full price at once. Several plans at the same time can be hard to keep track of; missed payments can affect your credit record. <i>1 mark per valid risk</i>	3
3	When you get the item	Lay-by: you only get the item after it is fully paid (and there is usually a fee to set it up). BNPL: you take the item home straight away and pay it off afterwards. <i>1 mark: lay-by collect after paying</i> <i>1 mark: BNPL item now</i>	2
4	\$0.90	He used 15% (0.15) instead of 1.5% (0.015). $60 \times 0.015 = \$0.90$ <i>1 mark: identifies 15% error</i> <i>1 mark: \$0.90</i>	2

D

Challenge *solutions and marking criteria*

/ 11 marks

Q	Answer	Working / sample response	Marks
1	\$600	Card: $\times 1.015$; cash: $\times 0.96$ Difference = $0.055 \times \text{price} = 33$ Price = $33 \div 0.055 = \\$600$ (check: $609 - 576 = 33$) <i>1 mark: both multipliers</i> <i>1 mark: $0.055p = 33$</i> <i>1 mark: \$600</i>	3
2	Refund \$174; cost \$46	Paid off the guitar: $60 + 5 \times 30 = \\$210$ Cancellation fee: $360 \times 0.1 = \\$36$; refund $210 - 36 = \\$174$ Total lost: $10 + 36 = \\$46$ <i>1 mark: \$210</i> <i>1 mark: \$174</i> <i>1 mark: \$46</i>	3

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Q	Answer	Working / sample response	Marks
3	Credit card, by \$10.40	BNPL: $800 + 2 \times 10 = \$820$ Card: $800 \times 1.012 = \$809.60$ $820 - 809.60 = \$10.40$ cheaper by card <i>1 mark: \$820</i> <i>1 mark: \$809.60</i> <i>1 mark: card by \$10.40</i>	3
4	\$223.30; no	$200 \times 1.1 \times 1.015 = \$223.30$ $200 \times 1.015 \times 1.1 = \$223.30$ as well – multiplying in either order gives the same result <i>1 mark: \$223.30</i> <i>1 mark: same, with reason</i>	2